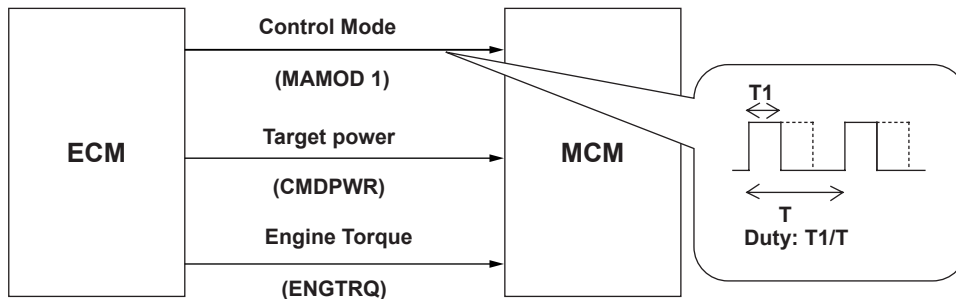


# Advanced Diagnostics

## DTC P1647 (05): Mode Signal Circuit 1 Low Input



P1647-0073

### General Description

The ECM (engine control module) sends the IMA control mode signals (MAMOD1) to the MCM (motor control module) by the PWM signal duty. The signal duty is converted into voltage via an integrator circuit in the MCM, and the CPU reads it as analog. The duty that is used for the control is set between 10% - 90% (equivalent to 0.5 V - 4.5 V), so it stays beyond the range when a malfunction such as an open in the signal wire or a short to ground occurs. If the MCM reads voltage lower than a set range, a short to ground in the signal wire is detected and a DTC is stored.

### Monitor Execution, Sequence, Duration, DTC Type

Execution	Continuous
Sequence	None
Duration	2 seconds or more
DTC Type	One drive cycle, MIL ON, IMA system indicator ON

### Enable Conditions

Condition	Minimum	Maximum
MCM power-supply voltage	10.5 V	—
Ignition switch	ON	
No active DTCs	ECM, MCM	

### Malfunction Threshold

The voltage converted in the MCM circuit is less than 0.24 V for at least 2 seconds.

## **Diagnosis Details**

### **Conditions for illuminating the MIL**

When a malfunction is detected, the MIL comes on and the DTC and the freeze frame data are stored in the ECM memory.

### **Conditions for clearing the MIL**

The MIL will be cleared if the malfunction does not recur during three consecutive trips in which the diagnostic runs.

The MIL, the DTC, and the freeze frame data can be cleared by using the scan tool Clear command or by disconnecting the battery.